

# Research on the Impact of Personal Characteristics of Executive Team on the Solvency of Companies

-- 120 Listed Companies in The Media Industry as An Example

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**Abstract:** As the core of corporate governance, the personal characteristics of the executive team have a certain impact on corporate solvency. This paper puts forward research-related hypotheses based on the theory of top echelon and overconfidence theory, takes the gender, age, and academic background of the executive team as independent variables, and indicates five indicators of corporate solvency as dependent variables, and designs a model in which the personal characteristics of the executive team have an impact on the company's solvency, and then this paper takes 120 listed companies in the domestic media industry in the period of 2017-2021 as the object of the study, and Using stepwise regression analysis to empirically study the relationship between the executive team's gender ratio, age, educational background and corporate solvency. It is found that the gender ratio of executive team members has a significant impact on the company's solvency, and the company's short-term solvency is stronger when there are more females in the executive team, while a smaller proportion of females and a higher proportion of males will improve the company's long-term solvency.

**Keywords:** Executive team, Personal traits, Solvency.

## 1. Introduction

Enterprises are able to repay debts in a timely manner is a necessary prerequisite for the survival of enterprises, to maintain a good financial situation, to avoid financial crises is a necessary condition for the successful transformation of enterprises. In the process of enterprise development, in addition to good profitability, it is more important to ensure their own solvency. Corporate financing methods, capital structure and solvency are influenced by the preferences of decision makers, and personal characteristics affect the behavior and choices of decision makers. Whether the gender, age, and education of executive team members affect their preferences, which in turn play a role in corporate decision-making, and ultimately whether they can be reflected in the company's solvency is a question worth studying. This paper takes 120 listed companies in the media industry from 2017 to 2021 as a sample to do an empirical study on the relationship between the personal traits of the executive team and the solvency of the company, to explore the connection between the two, and to make suggestions and recommendations for listed companies in the media industry to improve solvency and reduce financial risks.

## 2. Rationale and Research Hypothesis

The concept of executive team appeared for the first time in the "higher-order theory" proposed by Hambrick and Mason (1984), and the executive team has been widely concerned by scholars at home and abroad, and the research results related to it are endless. According to the higher-order theory, the strategic choices of enterprises generally depend on the values and cognitive basis of decision makers, the strategic choices are based on the personal interpretation of strong managers in the organization, the executive team plays an important role in strategic decision making, the

background characteristics of corporate managers have an important impact on the psychological cognition, which leads to different managers to make different behaviors and decisions, and the background characteristics of executives have a great impact on the decision making and performance indicators of the enterprise. The background characteristics of executives can have a great impact on corporate decision-making and performance indicators.

Solvency, as an important part of corporate performance evaluation, is of great significance to companies. There have been many studies on the relationship between executive team and corporate solvency, but there are fewer studies on the individual characteristics of executive team and solvency in media companies. Based on Hambrick and Mason's higher-order theoretical framework, this paper selects the media industry as the research object to conduct an empirical study to explore the impact of personal characteristics of executive team members on corporate solvency.

### (i) Gender of executives

Some scholars have found that whether managers are overconfident or not affects their decision making, for example, Heaton (2002) pioneered the finding that overconfidence causes decision makers to overestimate the returns of investment projects, which leads to managers' preference for debt capital in financing. Hackbarth (2008) showed that overconfident leaders overestimate the firm's profitability and resilience to risk, resulting in higher gearing. Most of the domestic researchers' studies on the impact of personal traits of executive team members on the company's solvency are also based on the decision maker's overconfidence, e.g., Xiao Fenglei (2011) found that companies with overconfident chairmen are more inclined to have more investment expenditures and higher long-term liabilities; Jiang Wei's (2011) findings indicate that the younger the chairman's age is, the shorter the time of his tenure is, and the lower the education level is as well as the

higher the chairman's overconfidence when the chairman possesses an economic and management educational background, the stronger the chairman's overconfidence behavior and the more he chooses higher debt ratios; Li Yongzhuang (2014) explored the mechanism of leader's overconfidence on firm performance from the perspective of the mediating role played by debt financing preference. Park Linglan (2017) found that there is a gender difference in the choice of financing methods made by corporate managers - women are less likely to use endogenous financing and debt financing compared to male managers. Some studies have found that gender is one of the factors affecting overconfidence, Lundeborg et al. (1994) found that overconfidence between genders is manifested in different types of work, and men tend to show more self-confidence in areas that belong to the male type of work. Li Shigang (2014) female executives can significantly reduce the probability of overconfidence in listed companies. At the same time, managers with different genders have greater differences in their attitudes toward risk management, female managers face risks with more risk-averse attitudes, and they are more sensitive and cautious in the face of possible losses, Zhu Jigao, Ye Kangtao, and Yan Dong (2012) found through empirical research that female managers are more prone to risk aversion, and the risk preference of female managers leads to the possibility that they may be more sensitive and cautious when making The risk preference of female managers leads them to make decisions that may reduce the amount of debt capital more, especially the proportion of current liabilities, and in this way to enhance the company's solvency and avoid financial risks.

Hence the following hypotheses:

Hypothesis 1: The higher the proportion of women in the executive team team, the higher the solvency;

Hypothesis 1a: The higher the proportion of women in the executive team team, the lower the gearing ratio;

Hypothesis 1b: The higher the percentage of women in the executive team team, the lower the net operating cash ratio;

Hypothesis 1c: A higher percentage of women in the executive team team leads to a high current ratio;

Hypothesis 1d: A higher percentage of females in the executive team team will result in a high quick ratio;

Hypothesis 1e: A higher percentage of females in the executive team team will result in a high cash ratio;

(ii) Age of executives

Numerous studies have shown that executive age has an impact on the cognitive behavior and information acquisition and screening ability of executives, due to the decline of the above abilities coupled with the aging of the knowledge structure and the reduction of adaptability, corporate executives have less confidence in making decisions, which in turn affects the decision making of executives. Margarethe and Bantel, in their study of the strategic decision making behavior of corporations, found that the higher the age of the executives of the corporation, the more conservative the corporation is in Hambrick and Mason point out that older executives have lower cognitive, information acquisition, and adaptability abilities, and are more inclined to conservative measures, and younger executives are more inclined to make risky decisions than older executives.

Decision makers of relatively young age are less likely to choose risk avoidance and more likely to choose high-risk and high-yield decisions when facing risks, and they have higher risk-tolerance ability, so they adopt more debt capital when

choosing the company's financing method and financing structure to increase the gearing ratio and achieve the maximization of shareholders' rights and interests. Older decision makers pursue more stable and less risky decisions when making choices, and at the same time, they will reduce the proportion of the company's debt capital.

Therefore there are the following hypotheses:

Hypothesis 2: The higher the age of the members of the executive team, the higher the solvency of the company.

Hypothesis 2a: The higher the average age of the executive team, the lower the gearing ratio;

Hypothesis 2b: The higher the average age of the executive team, the lower the net operating cash ratio;

Hypothesis 2c: Higher average age of the executive team leads to higher current ratio;

Hypothesis 2d: The greater the average age of the executive team will result in a high quick ratio;

Hypothesis 2e: The greater the average age of the executive team will lead to a high cash ratio;

(iii) Executive qualifications

Highly educated executives have more advantages in accepting new things, new ideas and acquiring information ability. Margarethe and Bantel's study proved [29] that highly educated executives have more influence on the occurrence of diversification and strategic innovation of enterprises. Chen Chuanming and Sun Junhua pointed out in their study on the choice of diversification strategy of Chinese companies [20] that the education of corporate executives is positively related to corporate diversification. He Weifeng and Liu Qiliang pointed out in their study of financial restatement behavior of listed companies in China [22] that the academic qualifications of corporate executives are negatively related to corporate financial restatement behavior. The above research results show that the educational background of executives can use their cognitive ability and information processing ability to influence executive decision-making and thus corporate behavior when executives make decisions that affect corporate behavior, and that when members of the executive team have a high level of education, they have a negative relationship with corporate financial restatement behavior.

When the executive team members have high education, they will collect more effective information when making decisions, consider various factors to predict the future, make the most favorable decisions for the company, and they have better processing ability when making judgments, and they have the ability to plan ahead for a rainy day. Therefore, companies with highly educated executive team members are likely to be more solvent.

Therefore there are the following hypotheses:

Hypothesis 3: The higher the level of education of the members of the executive team team, the higher the solvency of the company.

Hypothesis 3a: The higher the educational level of executive team members, the lower the gearing ratio;

Hypothesis 3b: The higher the educational level of the executive team members, the lower the net operating cash ratio;

Hypothesis 3c: Higher educational levels of executive team members lead to a high current ratio;

Hypothesis 3d: Higher educational levels of executive team members will lead to a high quick ratio;

Hypothesis 3e: Higher educational levels of executive team members will lead to a high cash ratio;

### 3. Research Design

#### (I) Sample selection

This paper selects the data of listed companies in the media industry from 2017 to 2021, including information on the age, gender, educational background and solvency indicators of the executive team, and selects the executives in the media industry as the object of study, compared with other personnel in the enterprise, the executive team will play a decisive role in the company's decision-making, and will have a greater and more long-term impact on the company's development and decision-making. In the process of sample selection, in order to avoid the interference of certain data on the results of the study, the research sample of this paper excludes data anomalies and imperfect information of the executive team members of the enterprise, the company's solvency data from

the CSMAR Cathay Pacific Financial Research Database.

#### (ii) Variable design

This paper focuses on the impact of personal characteristics such as gender, age, and academic background of the executive team on the solvency of listed companies in the media industry. The independent variables are the gender ratio, age, and academic background of the executives, and the dependent variables are selected to reflect the indexes of the solvency of the enterprise, which are mainly the asset-liability ratio, the current ratio, the quick ratio, the operating cash flow ratio to the total liabilities, and the cash ratio. The control variables are company size, profitability, company age, the proportion of shares held by the first largest shareholder. The definitions of the variables involved in this paper are shown in Table 1.

Table 1. Variables

Variables	Code	Variable Definition
Debt Ratio	DR	Total liabilities at year-end / Total assets at year-end
Current ratio	QR	Current assets / Current liabilities
Quick Ratio	AR	Quick Assets / Current Liabilities
Cash Ratio	CR	(Money funds + Marketable securities) / Current liabilities
Cash Flow to Debt Ratio	ORFOA	Net cash flows from operating activities / Liabilities
Age	Age	Average age of executive team members
Sex	Gender	Gender ratio of executive team members: female/male
Education	Education	Educational level of members of the executive management team, with junior college and below expressed as 1, college as 2, bachelor's degree as 3, master's degree as 4, and doctoral degree as 5, taking the average of each year-end value of each company
Company Size	Size	Natural logarithm of the company's total assets
Profitability	ROA	Return on total assets = profit/total assets
Company Age	Age	ln (year of observation - year of registration + 1)
Shareholding ratio of the first largest shareholder	Top1	

#### (iii) Model

In order to test the hypotheses proposed above, the model constructed in this paper is as follows:

$$Y_i = \alpha_0 + \alpha_1 \text{Size} + \alpha_2 \text{ROA} + \alpha_3 \text{Firmage} + \alpha_4 \text{Top1} + \varepsilon \quad (i=1, 2, 3, 4, 5) \quad (1)$$

$$Y_i = \alpha_0 + \alpha_1 \text{Sex} + \alpha_2 \text{Size} + \alpha_3 \text{ROA} + \alpha_4 \text{Firmage} + \alpha_5 \text{Top1} + \varepsilon \quad (i=1, 2, 3, 4, 5) \quad (2)$$

$$Y_i = \alpha_0 + \alpha_1 \text{Age} + \alpha_2 \text{Size} + \alpha_3 \text{ROA} + \alpha_4 \text{Firmage} + \alpha_5 \text{Top1} + \varepsilon \quad (i=1, 2, 3, 4, 5) \quad (3)$$

$$Y_i = \alpha_0 + \alpha_1 \text{Edu} + \alpha_2 \text{Size} + \alpha_3 \text{ROA} + \alpha_4 \text{Firmage} + \alpha_5 \text{Top1} + \varepsilon \quad (i=1, 2, 3, 4, 5) \quad (4)$$

Y1, Y2, Y3, Y4 and Y5 are gearing ratio, current ratio, quick ratio, operating net cash ratio and cash ratio respectively. Model (1) is the regression of control variables and solvency indicators, and based on model (1), the independent variables executive gender ratio, executive age and executive education are introduced respectively to get model (2), model (3) and model (4).

### 4. Empirical Results and Analysis

#### (i) descriptive statistics

This paper selects the data related to the financial and executive team information of some listed companies in the media industry, and briefly analyzes the existing collected data, and the results are shown in the following table. As shown in Table 2, the average age of the executive team of listed companies in the media industry is 47.71 years old, and the standard deviation is large, which indicates that the average age of the executives in the media industry is on the high side and there are large differences among the companies in the industry. The mean value of the male-to-female gender ratio is 0.37, and the average education level is 3.12, indicating that most of the executive team members have an education level of bachelor's degree or above, but the standard deviation is large, i.e., there is a large difference in the level of education in the industry. By analyzing the financial data of listed companies in the media industry, it can be obtained that the average value of the industry's gearing ratio is 32.46%, the average value of the current ratio and quick ratio is 20.70 and 20.60, and the average value of the operating cash flow over the total liabilities and the average value of the cash ratio is -0.53 and 1.77, respectively. In addition to the gearing ratio, the standard deviation of the other four financial indicators is larger, which indicates that the media industry has a large difference in the Current ratio, quick ratio, operating cash flow over total liabilities, and cash ratio have large differences.

**Table 2.** Sample Situation Analysis

Variables	Sample size	Mean	Std.	Min	Max
Debt Ratio	600	0.3246	0.2298	0	1.8482
Current ratio	600	20.7028	309.5959	0.0138	7506.668
Quick Ratio	600	20.6025	309.6001	0.0138	7506.668
Cash Ratio	600	1.7744	15.3074	0	367.2271
Cash Flow to Debt Ratio	600	-0.5286	14.4899	-351.4803	37.6553
Age	600	47.7104	4.4916	0	60.5333
Sex	600	0.3733	0.2457	0.0455	1.5
Education	600	3.1237	1.2051	0	5
Company Size	600	22.2235	1.0241	18.65	24.5336
Profitability	600	-0.0052	0.1556	-1.0464	1.0043
Company Age	600	47.7104	4.4916	0	60.5333
Shareholding ratio of the first largest shareholder	600	33.1984	18.2112	5.82	80.35

## (ii) Correlation analysis

In this paper, the correlation analysis of the relationship between the variables was carried out using Stata software, and the results are shown in Table 3. Among them, gender

ratio is correlated with cash ratio and cash flow to debt ratio at 0.1% significant level, while it is significantly positively correlated with current ratio and quick ratio. Age is positively correlated with gearing ratio at 5% level of significance.

**Table 3.** Correlation analysis

	debt	qr	ar	cr	orfoa	age	sex	edu	size	roa	age	topl
debt	1.000											
qr	-0.088**	1.000										
ar	-0.088**	1.000***	1.000									
cr	-0.127***	0.062	0.062	1.000								
orfoa	0.058	-0.050	-0.050	0.060	1.000							
age	0.072*	0.008	0.008	0.009	-0.009	1.000						
sex	-0.005	0.084**	0.084**	0.160***	-0.154***	-0.241***	1.000					
edu	-0.043	0.025	0.025	0.027	-0.009	0.035	-0.013	1.000				
size	-0.197***	0.061	0.061	0.011	-0.008	0.337***	-0.146***	0.074*	1.000			
roa	-0.271***	0.034	0.033	0.028	0	0.131***	-0.043	-0.021	0.064	1.000		
age	0.072*	0.008	0.008	0.009	-0.009	1.000***	-0.241***	0.035	0.337***	0.131***	1.000	
topl	-0.075*	-0.031	-0.031	-0.010	0.037	0.412***	-0.219***	-0.029	0.108***	0.248***	0.412**	1.000

Note: \* indicates a significance level of 5%, \*\* indicates a significance level of 1%, and \*\*\* indicates a significance level of 0.1%.

## (iii) Stepwise regression analysis

Analysis of the results of stepwise regression found that, whether it is the age of the executive team or the educational background of the executive team, does not have a significant impact on the indicators of corporate solvency, hypothesis 2 and hypothesis 3 are not true, but the gender ratio of the executive team can have an impact on some of the indicators of solvency at the 0.1% significance level, but the gender ratio does not have the same impact on the company's short-term solvency and long-term solvency are different.

In terms of long-term solvency, gender does not have a significant effect on the gearing ratio, probably because the gearing ratio of the enterprise involves the capital structure, and the management of the enterprise usually chooses the capital structure that can maximize the wealth of the shareholders or the share price, and the factors affecting the capital structure include the industry, the investment motivation of the shareholders, the credit rating of the enterprise and the attitudes of the creditors, the attitudes of the proprietors, the enterprise's financial condition and growth, and the tax policy. There are too many influencing factors involved, and the risk preferences of corporate decision makers and gender do not have a large impact on capital structure. Gender ratio has an impact on another indicator of long-term solvency: net cash flow from operations, which is

negatively correlated with net cash flow from operations at the 0.1% level of significance. It shows that the long-term solvency will be poorer when there are more women in the executive team, which also proves that if there are more male members, it will enhance the long-term solvency of the company, and the empirical results support hypothesis 2.

Gender ratio has a significant effect on short-term solvency. This paper selects short-term solvency indicators are current ratio, quick ratio and cash ratio, according to table 4 can be concluded that the gender ratio on the current ratio is not significant, the reason may be that the current ratio contains inventory and other weak liquidity and unstable assets, reaction to the company's short-term solvency is not as accurate and reliable as quick ratio. Gender ratio and quick ratio and cash ratio are positively correlated at a significant level of 0.1%, and the empirical results support hypotheses 4 and 5, proving that the company's short-term solvency is higher when the proportion of women in the executive team is higher.

To summarize, the ratio of men and women in the executive team affects the company's solvency, and a high proportion of women enhances the company's short-term solvency, while a low proportion of women and a high proportion of men increases the company's long-term solvency.

**Table 4.** Stepwise regression results

Variables	DEBT	QR	AR	CRFOA	CR
Gender	0.0865 (0.0376)	120.6676 (53.3008)	10.94648*** (2.7355)	-9.1636*** (2.4004)	10.1349*** 2.6422
age	0.0031 (0.0031)	-1.4284 (3.4401)	-0.7833 (0.1838)	-0.0407 (0.1541)	0.0053 (0.1758)
Education	0.0219 (0.0268)	-0.0769 (0.1767)	0.2107 (2.1014)	0.5335 (1.8856)	0.1348 (2.0213)

Note: Standard deviation Std. Err. in parentheses; \* p<0.1, \*\* p<0.01, \*\*\* p<0.001.

## 5. Conclusions and Recommendations

This paper presents an empirical study of the relationship between executive team members and firm solvency from the perspective of their individual characteristics. The results of the study show that the company's short-term solvency is stronger when there are more women in the executive team, while a smaller proportion of women and a higher proportion of men will improve the company's long-term solvency. It is recommended that listed companies appropriately adjust the ratio of male to female members of the company's executive team in conjunction with their own capital structure in order to cope with financial risks and improve the company's survival rate. If the company's short-term debt is high compared with other companies, it should appropriately increase the number of female members, and if the long-term debt is high, it can appropriately reduce the number of female members and increase the number of male members.

## 6. Shortcomings and Prospects

The shortcomings of this paper are reflected in the selected samples, indicators and analysis methods. Due to the conditions, this paper only selected 120 companies in the media industry for research, the sample size is small, the research results are not necessarily representative, which has a certain impact on the conclusion, and needs to be improved in the follow-up. The number of indicators selected is small, only five indicators are selected to measure the company's solvency, and it is necessary to increase the number of indicators in the follow-up study to improve the credibility of the conclusions. The analysis method of the article: stepwise regression method is relatively simple, and more complex research methods can be used to explore the relationship between the personal characteristics of executive team members and the company's solvency.

## Acknowledgment

Anhui University of Finance and Economics Graduate Student Research and Innovation Fund Project (ACYC2022110).

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